

AMENDMENTS TO THE CLAIMS

Claims 1-15. (canceled)

Claim 16. (new) A processing apparatus, comprising:

an encoder operable to encode video and/or audio signals to generate stream files;
the stream files being composed of compressed video data;

a processor operable to generate plural types of characteristic point information for the video and audio signals contained in each stream file; the characteristic point information including positional information indicating a user designated position and content related positions; the characteristic point information being included in a management information file corresponding to each stream file and being used to access characteristic points when reproducing the stream files; and

a recording unit operable to record the stream files and corresponding management information files containing the plural types of characteristic point information in a recording medium; the plural types of characteristic point information being correlated with respective positions of the characteristic point information.

Claim 17. (new) The processing apparatus according to claim 16, wherein said content related positions include at least one of a start point, an end point, and a scene change point of a program.

Claim 18. (new) The processing apparatus according to claim 17, wherein said content related positions further include an I-picture position of the program.

Claim 19. (new) The processing apparatus according to claim 17, wherein said content related positions further include a silent point of the program.

Claim 20. (new) A processing apparatus for use in conjunction with a recording device, comprising:

a processor operable to generate plural types of characteristic point information including positional information indicating a user designated type characteristic point and a content related type characteristic point from an input video and audio signal; and

a generator operable to generate management information containing the plural types of characteristic point information; the types of characteristic point information being correlated with respective positions of the characteristic point information.

Claim 21. (new) The processing apparatus according to claim 20, wherein said content related positions include at least one of a start point, an end point, and a scene change point of a program.

Claim 22. (new) The processing apparatus according to claim 21, wherein said content related positions further include an I-picture position of the program.

Claim 23. (new) The processing apparatus according to claim 21, wherein said content related positions further include a silent point of the program.

Claim 24. (new) A processing apparatus for use in conjunction with a recording device, comprising:

a processor operable to generate plural types of characteristic point information including positional information indicating a user designated type characteristic point and a content related type characteristic point from an input video and audio signal;

a user interface operable to receive a user operation indicative of the user designated position; and

a generator operable to generate management information containing the plural types of characteristic point information; the types of characteristic point information being correlated with respective positions of the characteristic point information.

Claim 25. (new) The processing apparatus according to claim 24, wherein said content related positions include at least one of a start point, an end point, and a scene change point of a program.

Claim 26. (new) The processing apparatus according to claim 25, wherein said content related positions further include an I-picture position of the program.

Claim 27. (new) The processing apparatus according to claim 25, wherein said content related positions further include a silent point of the program.

Claim 28. (new) A processing method, comprising the steps of:

an encoding step of encoding video and audio signals to generate stream files; the

stream files being composed of compressed video data;

a processing step of generating plural types of characteristic point information for the video and audio signals contained in each stream file; the characteristic point information including positional information indicating a user designated position and content related positions; the characteristic point information being included in a management information file corresponding to each stream file and being used to access characteristic points when reproducing the stream files; and

a recording step of recording the stream files and corresponding management information files containing the plural types of characteristic point information in a recording medium; the plural types of characteristic point information being correlated with respective positions of the characteristic point information.

Claim 29. (new) The processing method according to claim 28, wherein said content related positions include at least one of a start point, an end point, and a scene change point of a program.

Claim 30. (new) The processing method according to claim 29, wherein said content related positions further include an I-picture position of the program.

Claim 31. (new) The processing method according to claim 29, wherein said content related positions further include a silent point of the program.

Claim 32. (new) A processing method for use in conjunction with a recording

device, comprising:

a processing step of generating plural types of characteristic point information including positional information indicating a user designated type characteristic point and a content related type characteristic point from an input video and audio signal; and
a generating step of generating management information containing the plural types of characteristic point information; the types of characteristic point information being correlated with respective positions of the characteristic point information.

Claim 33. (new) The processing method according to claim 32, wherein said content related positions include at least one of a start point, an end point, and a scene change point of a program.

Claim 34. (new) The processing method according to claim 33, wherein said content related positions further include an I-picture position of the program.

Claim 35. (new) The processing method according to claim 33, wherein said content related positions further include a silent point of the program.

Claim 36. (new) A processing method for use in conjunction with a recording device, comprising:

a processing step of generating plural types of characteristic point information including positional information indicating a user designated type characteristic point and a content related type characteristic point from an input video and audio signal;

a receiving step of receiving a user operation indicative of the user designated position; and

a generating step of generating management information containing the plural types of characteristic point information; the types of characteristic point information being correlated with respective positions of the characteristic point information.

Claim 37. (new) The processing method according to claim 36, wherein said content related positions include at least one of a start point, an end point, and a scene change point of a program.

Claim 38. (new) The processing method according to claim 37, wherein said content related positions further include an I-picture position of the program.

Claim 39. (new) The processing method according to claim 37, wherein said content related positions further include a silent point of the program.

Claim 40. (new) A computer program encoded on a computer-readable medium, for performing a processing method, comprising:

an encoding step of encoding video and audio signals to generate stream files; the stream files being composed of compressed video data;

a processing step of generating plural types of characteristic point information for the video and audio signals contained in each stream file; the characteristic point information including positional information indicating a user designated position and

content related positions; the characteristic point information being included in a management information file corresponding to each stream file and being used to access characteristic points when reproducing the stream files; and

a recording step of recording the stream files and corresponding management information files containing the plural types of characteristic point information in a recording medium; the plural types of characteristic point information being correlated with respective positions of the characteristic point information.

Claim 41. (new) The computer program according to claim 40, wherein said content related positions include at least one of a start point, an end point, and a scene change point of a program.

Claim 42. (new) The computer program according to claim 41, wherein said content related positions further include an I-picture position of the program.

Claim 43. (new) The computer program according to claim 41, wherein said content related positions further include a silent point of the program.

Claim 44. (new) A computer program encoded on a computer-readable medium, for performing a processing method in conjunction with a recording device, comprising:

a processing step of generating plural types of characteristic point information including positional information indicating a user designated type characteristic point and a content related type characteristic point from an input video and audio signal; and

a generating step of generating management information containing the plural types of characteristic point information; the types of characteristic point information being correlated with respective positions of the characteristic point information.

Claim 45. (new) The computer program according to claim 44, wherein said content related positions include at least one of a start point, an end point, and a scene change point of a program.

Claim 46. (new) The computer program according to claim 45, wherein said content related positions further include an I-picture position of the program.

Claim 47. (new) The processing method according to claim 45, wherein said content related positions further include a silent point of the program.

Claim 48. (new) A computer program encoded on a computer-readable medium, for performing a processing method in conjunction with a recording device, comprising:

a processing step of generating plural types of characteristic point information including positional information indicating a user designated type characteristic point and a content related type characteristic point from an input video and audio signal;

a receiving step of receiving a user operation indicative of the user designated position; and

a generating step of generating management information containing the plural types of characteristic point information; the types of characteristic point information

being correlated with respective positions of the characteristic point information.

Claim 49. (new) The computer program according to claim 48, wherein said content related positions include at least one of a start point, an end point, and a scene change point of a program.

Claim 50. (new) The computer program according to claim 49, wherein said content related positions further include an I-picture position of the program.

Claim 51. (new) The computer program according to claim 49, wherein said content related positions further include a silent point of the program.

Claim 52. (new) A processing apparatus, comprising:

a reproducing unit operable to reproduce stream files containing video and audio signals and corresponding management information files recorded on a recording medium; the stream files being composed of compressed video data;

a processor operable to generate plural types of characteristic point information from the management information file corresponding to each stream; the characteristic point information including positional information indicating a user designated position and content related positions; the plural types of characteristic point information being correlated with respective positions of the characteristic point information; and

a controller for controlling reproduction of said stream files based on the plural types of said characteristic point information reproduced from the corresponding management information files.

Claim 53. (new) The processing apparatus according to claim 52, wherein said content related positions include at least one of a start point, an end point, and a scene change point of a program.

Claim 54. (new) The processing apparatus according to claim 53, wherein said content related positions further include an I-picture position of the program.

Claim 55. (new) The processing apparatus according to claim 53, wherein said content related positions further include a silent point of the program.

Claim 56. (new) A processing apparatus for use in conjunction with a reproducing device, comprising:

a processor operable to reproduce plural types of characteristic point information including positional information indicating a user designated position and a content related type characteristic point from management information files corresponding to stream files containing a video and audio signal; the types of characteristic point information being correlated with respective positions of the characteristic point information; and

a controller for controlling reproduction of said stream files based on the plural types of said characteristic point information reproduced from the corresponding management information files.

Claim 57. (new) The processing apparatus according to claim 56, wherein said content related positions include at least one of a start point, an end point, and a scene change point of a program.

Claim 58. (new) The processing apparatus according to claim 57, wherein said content related positions further include an I-picture position of the program.

Claim 59. (new) The processing apparatus according to claim 57, wherein said content related positions further include a silent point of the program.

Claim 60. (new) A processing apparatus for use in conjunction with a recording device, comprising:

a processor operable to reproduce plural types of characteristic point information including positional information indicating a user designated position and a content related type characteristic point from management information files corresponding to stream files containing a video and audio signal; the types of characteristic point information being correlated with respective positions of the characteristic point information;

a user interface operable to receive a user operation indicative of the user

designated position; and

a controller for controlling reproduction of said stream files based on the plural types of said characteristic point information reproduced from the corresponding management information files.

Claim 61. (new) The processing apparatus according to claim 60, wherein said content related positions include at least one of a start point, an end point, and a scene change point of a program.

Claim 62. (new) The processing apparatus according to claim 61, wherein said content related positions further include an I-picture position of the program.

Claim 63. (new) The processing apparatus according to claim 61, wherein said content related positions further include a silent point of the program.

Claim 64. (new) A processing method, comprising the steps of:

a reproducing step of reproducing stream files containing video and audio signals and corresponding management information files recorded on a recording medium; the stream files being composed of compressed video data;

a processing step of generating plural types of characteristic point information from the management information file corresponding to each stream; the characteristic point information including positional information indicating a user designated position

and content related positions; the plural types of characteristic point information being correlated with respective positions of the characteristic point information; and

a control step of controlling reproduction of said stream files based on the plural types of said characteristic point information reproduced from the corresponding management information files.

Claim 65. (new) The processing method according to claim 64, wherein said content related positions include at least one of a start point, an end point, and a scene change point of a program.

Claim 66. (new) The processing method according to claim 65, wherein said content related positions further include an I-picture position of the program.

Claim 67. (new) The processing method according to claim 65, wherein said content related positions further include a silent point of the program.

Claim 68. (new) A processing method for use in conjunction with a recording device, comprising:

a processing step of reproducing plural types of characteristic point information including positional information indicating a user designated position and a content related type characteristic point from management information files corresponding to stream files containing a video and audio signal; the types of characteristic point

information being correlated with respective positions of the characteristic point information; and

a control step of controlling reproduction of said stream files based on the plural types of said characteristic point information reproduced from the corresponding management information files.

Claim 69. (new) The processing method according to claim 68, wherein said content related positions include at least one of a start point, an end point, and a scene change point of a program.

Claim 70. (new) The processing method according to claim 69, wherein said content related positions further include an I-picture position of the program.

Claim 71. (new) The processing method according to claim 69, wherein said content related positions further include a silent point of the program.

Claim 72. (new) A processing method for use in conjunction with a recording device, comprising:

a processing step of reproducing plural types of characteristic point information including positional information indicating a user designated position and a content related type characteristic point from management information files corresponding to stream files containing a video and audio signal; the types of characteristic point

information being correlated with respective positions of the characteristic point information;

a receiving step of receiving a user operation indicative of the user designated position; and

a control step of controlling reproduction of said stream files based on the plural types of said characteristic point information reproduced from the corresponding management information files.

Claim 73. (new) The processing method according to claim 72, wherein said content related positions include at least one of a start point, an end point, and a scene change point of a program.

Claim 74. (new) The processing method according to claim 73, wherein said content related positions further include an I-picture position of the program.

Claim 75. (new) The processing method according to claim 73, wherein said content related positions further include a silent point of the program.

Claim 76. (new) A computer program encoded on a computer-readable medium, for performing a processing method, comprising:

a reproducing step of reproducing stream files containing video and audio signals and corresponding management information files recorded on a recording medium; the stream files being composed of compressed video data;

a processing step of generating plural types of characteristic point information from the management information file corresponding to each stream; the characteristic point information including positional information indicating a user designated position and content related positions; the plural types of characteristic point information being correlated with respective positions of the characteristic point information; and

a control step of controlling reproduction of said stream files based on the plural types of said characteristic point information reproduced from the corresponding management information files.

Claim 77. (new) The computer program according to claim 76, wherein said content related positions include at least one of a start point, an end point, and a scene change point of a program.

Claim 78. (new) The computer program according to claim 77, wherein said content related positions further include an I-picture position of the program.

Claim 79. (new) The computer program according to claim 77, wherein said content related positions further include a silent point of the program.

Claim 80. (new) A computer program encoded on a computer-readable medium, for performing a processing method in conjunction with a reproducing device, comprising:

a processing step of reproducing plural types of characteristic point information including positional information indicating a user designated position and a content

related type characteristic point from management information files corresponding to stream files containing a video and audio signal; the types of characteristic point information being correlated with respective positions of the characteristic point information; and

a control step of controlling reproduction of said stream files based on the plural types of said characteristic point information reproduced from the corresponding management information files.

Claim 81. (new) The computer program according to claim 80, wherein said content related positions include at least one of a start point, an end point, and a scene change point of a program.

Claim 82. (new) The computer program according to claim 81, wherein said content related positions further include an I-picture position of the program.

Claim 83. (new) The computer program according to claim 81, wherein said content related positions further include a silent point of the program.

Claim 84. (new) A computer program encoded on a computer-readable medium, for performing a processing method in conjunction with a reproducing device, comprising:

a processing step of reproducing plural types of characteristic point information including positional information indicating a user designated position and a content related type characteristic point from management information files corresponding to

stream files containing a video and audio signal; the types of characteristic point information being correlated with respective positions of the characteristic point information;

a receiving step of receiving a user operation indicative of the user designated position; and

a control step of controlling reproduction of said stream files based on the plural types of said characteristic point information reproduced from the corresponding management information files.

Claim 85. (new) The computer program according to claim 84, wherein said content related positions include at least one of a start point, an end point, and a scene change point of a program.

Claim 86. (new) The computer program according to claim 85, wherein said content related positions further include an I-picture position of the program.

Claim 87. (new) The computer program according to claim 85, wherein said content related positions further include a silent point of the program.